



COMPENSATED DENSITY/NEUTRON PE LOG

Company MULL DRILLING COMPANY, INC.
Well THORNBURG TRUST "A" #1-34
Field CHAPMAN
County GOVE State KANSAS

Location: API #: 15-063-22392-0000

896' FNL & 2475' FWL

SEC 34 TWP 15S RGE 26W

Permanent Datum GROUND LEVEL Elevation 2533
Log Measured From KELLY BUSHING 11' A.G.L.
Drilling Measured From KELLY BUSHING

Other Services
DIL/MEL
SONIC

Elevation
K.B. 2544
D.F. 2542
G.L. 2533

Date 12/13/21

Run Number ONE

Depth Driller 4578

Depth Logger 4578

Bottom Logged Interval 4554

Top Log Interval 3850

Casing Driller 8 5/8" @ 226

Casing Logger 226

Bit Size 7 7/8

Type Fluid in Hole CHEMICAL MUD CHLORIDES 2600 PPM

Density / Viscosity 9.4/60

pH / Fluid Loss 10.5/6.0

Source of Sample FLOWLINE

Rm @ Meas. Temp 1.20 @ 58F

Rmf @ Meas. Temp .90 @ 58F

Rmc @ Meas. Temp 1.44 @ 58F

Source of Rmf / Rmc MEASUREMENT

Rm @ BHT .57 @ 121F

Time Circulation Stopped 2 HOURS

Time Logger on Bottom 1111

Maximum Recorded Temperature 121F

Equipment Number 3802

Location HAYS, KANSAS

Recorded By JASON CAPPELLUCCI

Witnessed By BLAKE MILLER

TJ DREILING

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

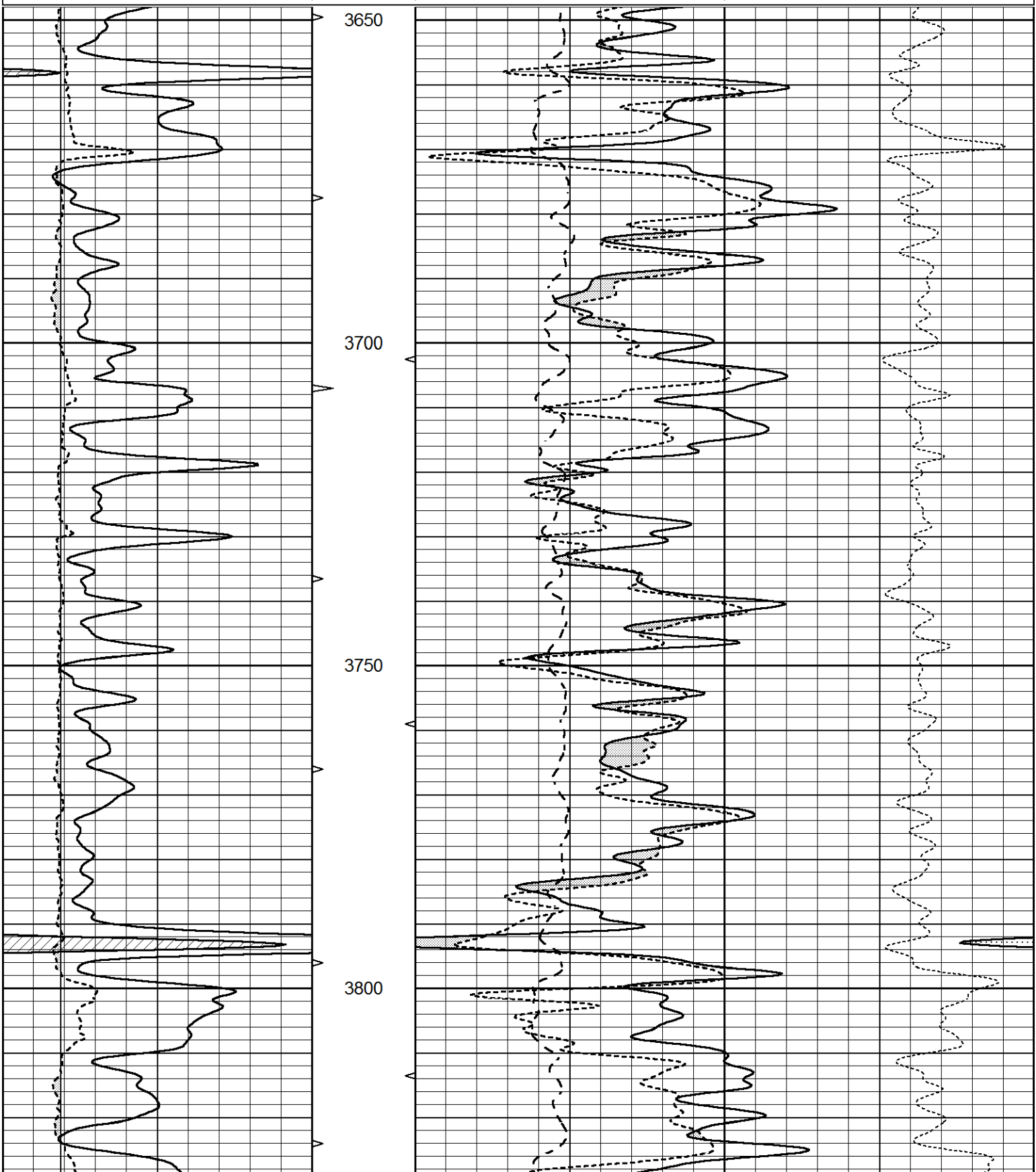
THANK YOU FOR USING ELI WIRELINE SERVICES, HAYS, KS. (785) 628-6395
DIRECTIONS
WEST EDGE OF UTICA, KS. - 4 NORTH ON RD. D - 1 WEST AT THE T - 1 NORTH - WEST INTO

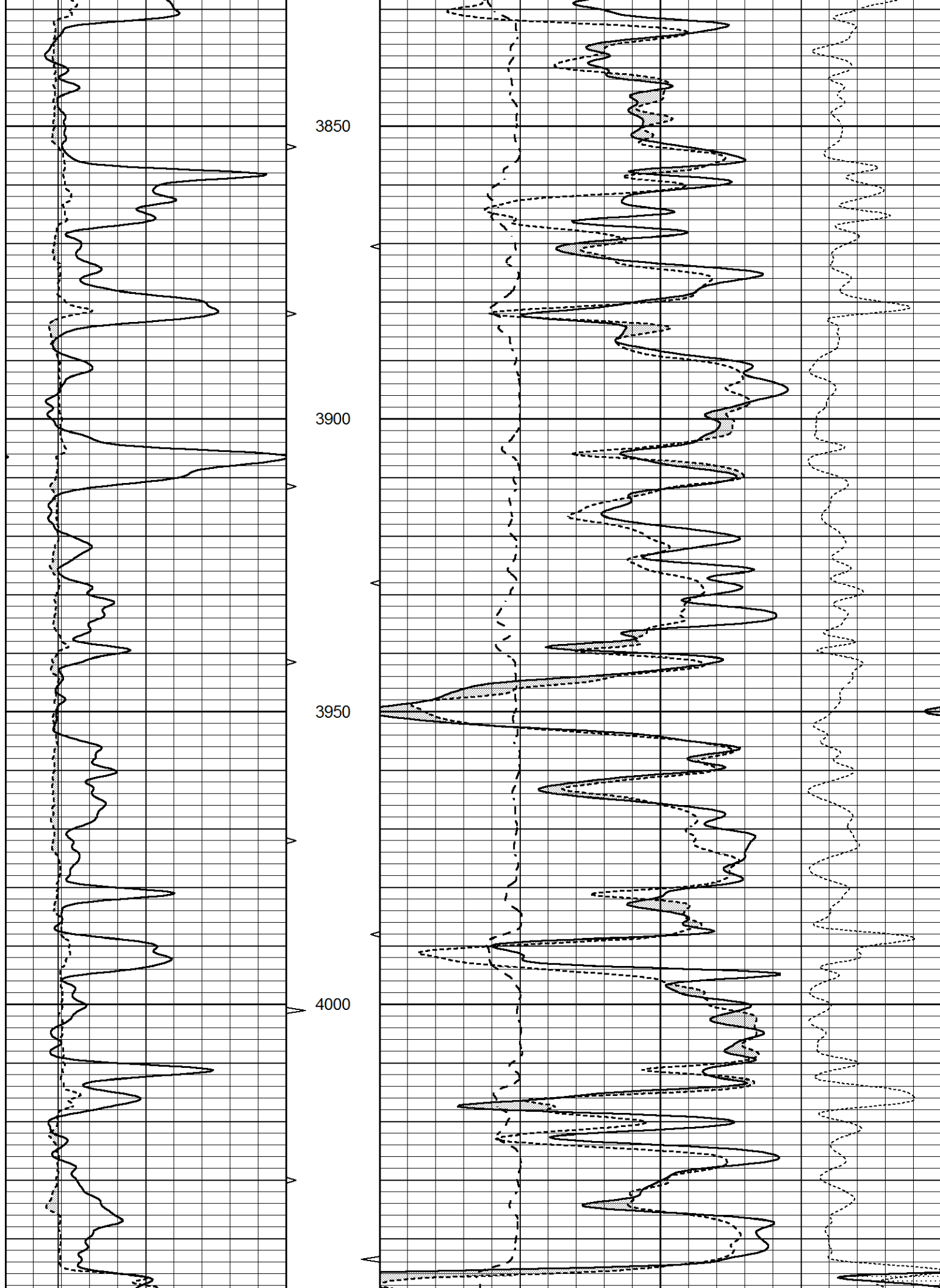


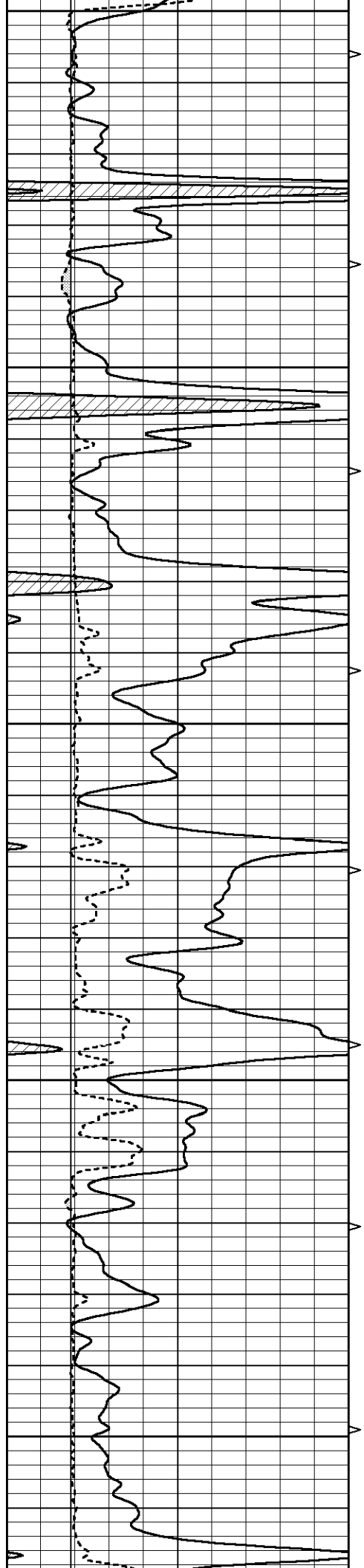
MAIN SECTION

Database File	6063pe.db
Dataset Pathname	pass4.1
Presentation Format	_ldt_neu
Dataset Creation	Mon Dec 13 06:04:01 2021
Charted by	Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)	-10
6	CALIPER (in)	16	10 (ft3) 0	30	COMPENSATED NEUTRON (pu)	-10
			TBHV	0	PE	10
			0 (ft3) 10	-0.25 CORRECTION (g/cc) 0.25		
					0	LTEN (lb) 5000







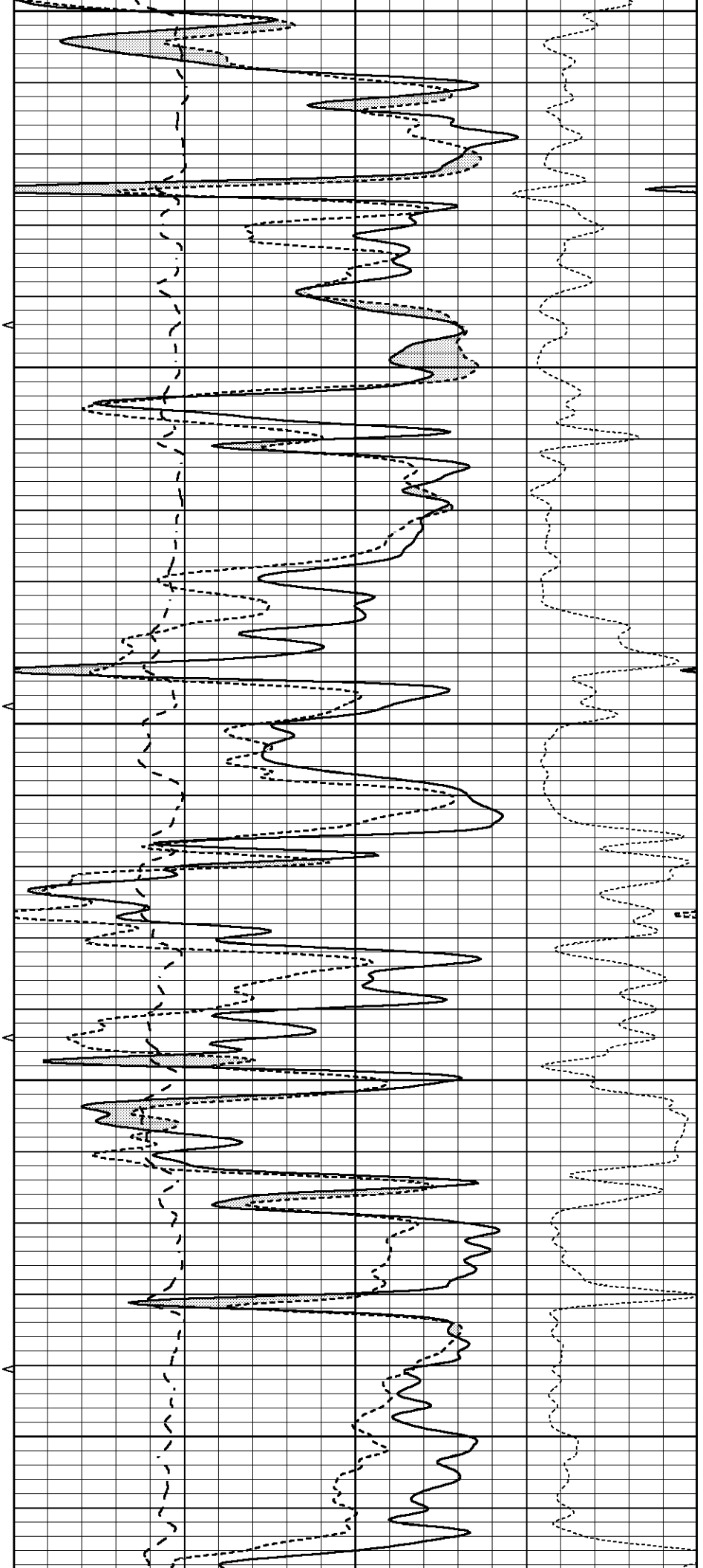
4050

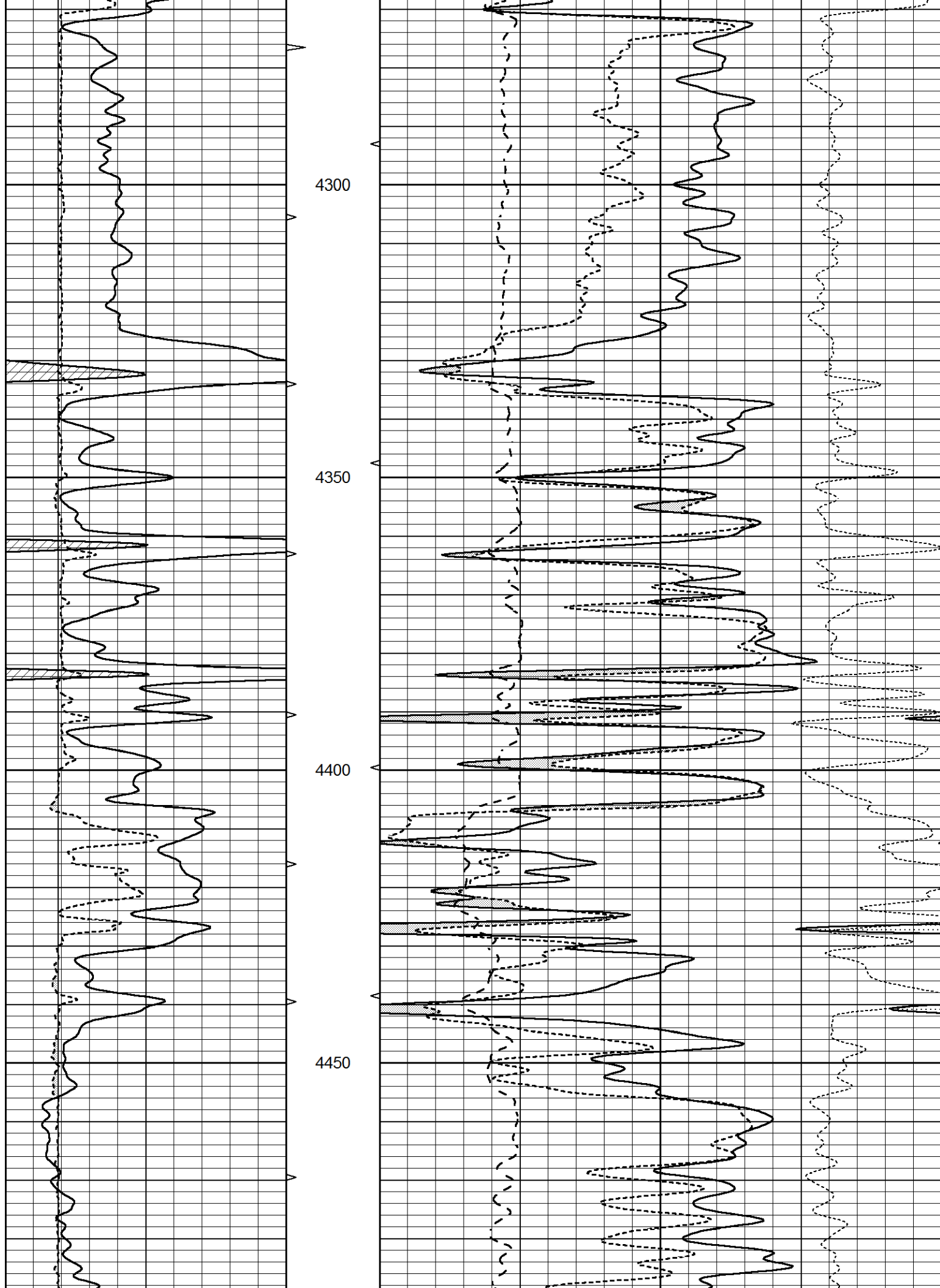
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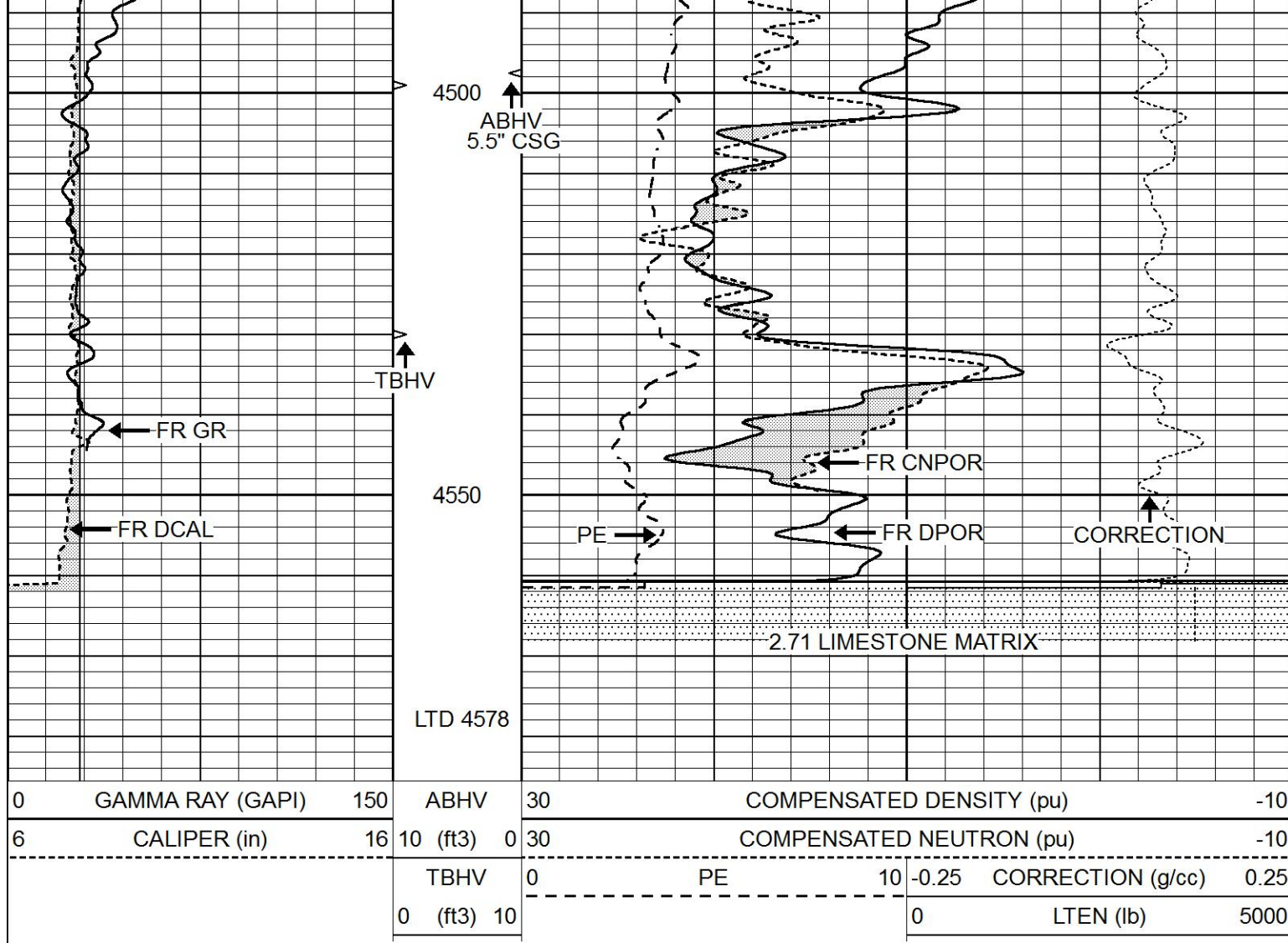
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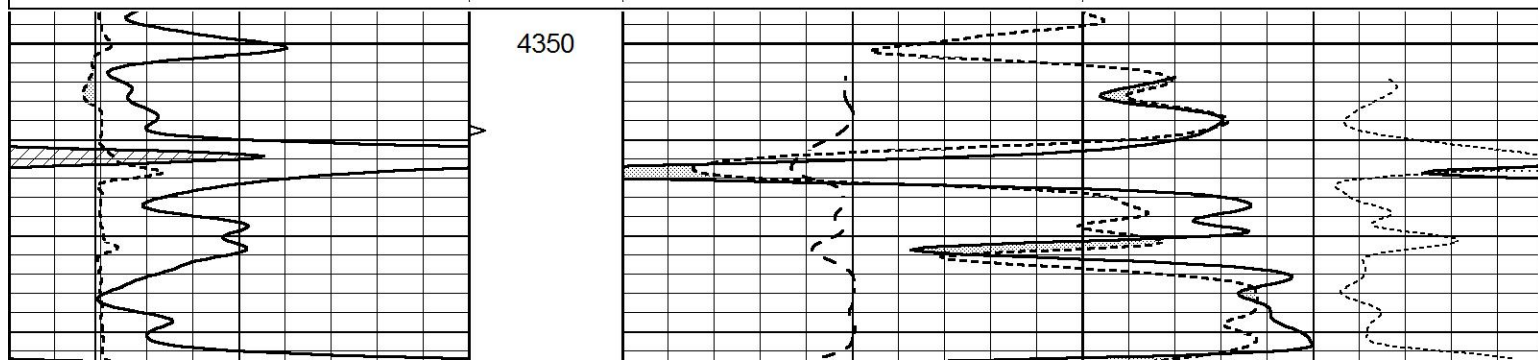


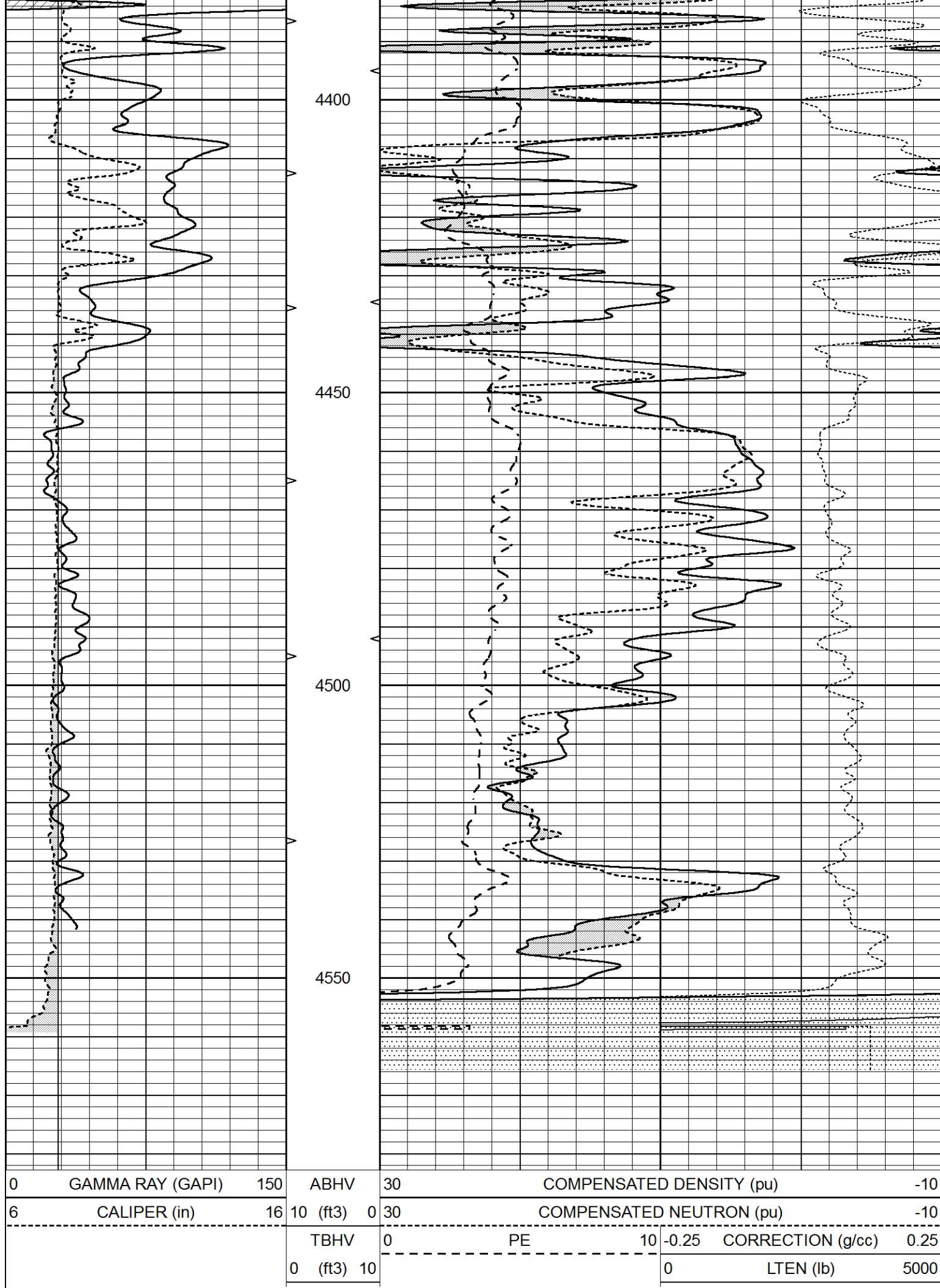


REPEAT SECTION

Database File 6063pe.db
 Dataset Pathname pass3.1
 Presentation Format _ldt_neu
 Dataset Creation Mon Dec 13 06:03:30 2021
 Charted by Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)	-10
6	CALIPER (in)	16	10 (ft3) 0	30	COMPENSATED NEUTRON (pu)	-10
			TBHV	0	PE	10
			0 (ft3) 10	-0.25	CORRECTION (g/cc)	0.25
				0	LTEN (lb)	5000





Calibration Report		
Database File	6063pe.db	
Dataset Pathname	pass3.1	
Dataset Creation	Mon Dec 13 06:03:30 2021	

Dual Induction Calibration Report

Serial-Model:	FW1410-56-Probe
Surface Cal Performed:	Mon Jun 15 22:52:02 2020
Downhole Cal Performed:	Tue Jul 25 12:15:37 2017
After Survey Verification Performed:	Tue Jul 25 12:15:38 2017

Surface Calibration								
Loop:	Readings			References			Results	
	Air	Loop		Air	Loop		m	b
Deep	0.008	0.765	V	1.000	400.000	mmho/m	400.061	-3.201
Medium	-0.056	0.761	V	1.000	464.000	mmho/m	425.187	32.510
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.005	0.624	V	0.000	400.000	mmho/m	645.611	-3.034
Medium	0.012	0.721	V	0.000	464.000	mmho/m	653.591	-7.532

Downhole Calibration								
	Readings			References			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	-0.647	301.329	mmho/m	-0.780	336.378	mmho/m	1.117	-0.058
Medium	38.256	411.013	mmho/m	39.046	441.706	mmho/m	1.080	-2.280
LL3		7.471	V		2500.000	Ohm-m		
		0.001	V		20.000	Ohm-m		
		-7.085	V		5000.000	mmho-m		

After Survey Verification								
	Readings			Targets			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	-0.647	301.329	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	38.256	411.013	mmho/m	1.000	0.000
LL3		0.000	Ohm-m		1500.000	Ohm-m		
		0.000	Ohm-m		20.000	Ohm-m		
		0.000	mmho-m		3745.000	mmho-m		

Litho Density Calibration Report		
Serial:	140704	
Model:	V4_10P	
Source Number:	74GBq-19	

Master Calibration				Performed:	Mon Dec 07 12:12:14 2020
	Background	Aluminum	Magnesium		
Window 1	557.73	5525.14	24361.20	cps	
Window 2	47.08	1245.09	5901.17	cps	
Window 4	239.06	1250.70	5456.76	cps	
Window 5	564.08	8300.56	16134.07	cps	
Window 6	44.21	1356.78	2705.40	cps	
Window 8	267.87	2686.97	5150.30	cps	
Bulk Density	-	2.6020	1.6830	g/cc	
Pe	-	3.0000	2.5070	b/e	

LS Alpha: : -1.8719		SS Alpha: : -0.8000		LS CPE: : 1.1424	
LS Beta: : 135562.6841		SS Beta: : 20128.7209		SS CPE: : 1.5489	
Before Survey Background Counts Verification				Performed: Wed Dec 31 18:00:00 1969	
Window 1		0.00	cps		
Window 2		0.00	cps		
Window 4		0.00	cps		
Window 5		0.00	cps		
Window 6		0.00	cps		
Window 8		0.00	cps		
After Survey Background Counts Verification				Performed: Wed Dec 31 18:00:00 1969	
Window 1		0.00	cps		
Window 2		0.00	cps		
Window 4		0.00	cps		
Window 5		0.00	cps		
Window 6		0.00	cps		
Window 8		0.00	cps		
Lithodensity Caliper Calibration				Performed: Mon Dec 07 12:12:14 2020	
Results		Readings		References (in)	
Low		High		Gain	
5852.8		8972.7		0.0	
				Offset	
				-3.4	
Before Survey Caliper Verification				Performed:	
Reference		Reading			
Caliper (in)					
After Survey Caliper Verification				Performed:	
Reference		Reading			
Caliper (in)					
Compensated Neutron Calibration Report					
		Serial Number:		080621PMC	
		Tool Model:		NABORS	
PRE-SURVEY VERIFICATION					
Detector		Readings		Measured	
Short Space		cps		Target	
Long Space		cps		pu	
POST-SURVEY VERIFICATION					
Detector		Readings		Measured	
Short Space		cps		Target	
Long Space		cps		pu	

Gamma Ray Calibration Report

Serial Number: 7
Tool Model: Probe1
Performed: Tue Jan 19 17:50:08 2021

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.5300 GAPI/cps